



**National Park Service
Fire Ecology Annual Report
Calendar Year 2005
Indiana Dunes**

Summary

This was the eighth year of the fire effects program at Indiana Dunes National Lakeshore. The fire effects crew at Indiana Dunes has fire effects plots established at Indiana Dunes (INDU), Sleeping Bear Dunes National Lakeshore (SLBE) and Lincoln Boyhood National Memorial (LIBO). This year's staff included one permanent and three seasonal positions. Fire ecology support is provided by the fire ecologist at Voyageurs National Park.

This is the second year the INDU fire effects program has monitored non-FMH plots. These plots were added to determine prescribed fire effects with higher confidence. The monitoring crew also conducted post-burn and post-mechanical thinning monitoring at Lincoln Boyhood.

The first mechanical thinning project at Sleeping Bear Dunes was completed with the help of the INDU fire crew. The treatment was done around an historic life saving station and a private residence. Photo points were installed and monitored pre and post by SLBE staff. They look forward to beginning a prescribed fire program in the near future.

Table 1. Management Objectives and Monitoring Results 2005

Ten burn level monitoring plots were installed in the Marquette trail burn unit. These were the first of their kind at INDU. No specific objectives are stated for woody fuels reduction. Minimum sample size analysis was done for poles (2.5-15.0 cm).

Burn Unit	Management Objective (Restoration/Fuels reduction)	Monitoring Results (95% confidence interval)	Objective Achieved?
Marquette Trail (Oak Savanna)	Achieve litter depth of <2".	Average litter depth reduced from 2.3" to 0.65" ($p < 0.0001$)	YES
	Coarse woody debris: Reduce fine fuels	1hr fuels were reduced by ~50% while no change was found in large fuels. (<i>Insufficient sample size for all fuels</i>)	YES
	Poles	Minimum sample size = 20 (<i>n=10 plots, 1 fire</i>)	

Table 2. Fire Effects Plot Workload 2005

Park	Monitoring Unit	Type of Plot (FMH, photo point, other)	Pre-burn	Immed. Post	Postburn (1-20 yrs)	Total Plots
Indiana Dunes	Old field prairie	FMH Grass plot		20	20	20
Indiana Dunes	Sand-Mined Little Bluestem Prairie	FMH Grass plot				8
Indiana Dunes	Oak Savanna	FMH Forest plot		5		17
Indiana Dunes	Oak Woodland	FMH Forest plot			8	23
Indiana Dunes	Prairie, Savanna, Woodland complex (Howes Prairie & Lupine Lane)	Howes Prairie/USGS methods	32			32
Indiana Dunes	Oak Woodland (Hobart Prairie Grove)	Burn Unit Monitoring with nested frequency	16	16		16
Indiana Dunes	Oak Woodland (West Beach)	Burn Unit Monitoring	10	4		10
Indiana Dunes	Oak Savanna (Miller Woods)	Burn Unit Monitoring		31		31
Indiana Dunes	Oak Savanna/Woodland/Forest (Tolleston Dunes)	Burn Unit Monitoring		20		20
Indiana Dunes	Oak Woodland (Beverly Shores)	Burn Unit Monitoring	25			25
Indiana Dunes	Oak Woodland (Marquette Trail)	Burn Unit Monitoring			10	10
Indiana Dunes	Mixed Wetland (Derby Ditch)	Photo point	15			15
Sleeping Bear	Jack Pine Barrens (Life Saving Station)	Photo point Mechanical Thinning	7	7		7
Lincoln Boyhood	Upland Oak-Hickory (Cemetery Hill)	Other	1	5	5	8
Total			106	108	43	242

Table 3. Fire Ecology Staffing 2005

Monitor	Starting Date	Ending Date	# of Pay Periods	Training and Development
Amy Manke	2/14/05	12/10/05	21	S-134, S-244, S-230, S-231, Behave Plus, ENOP taskbook completed, FFT1 and GIST taskbooks initiated, CPR/1 st Aid, Adv. GIS class at Valparaiso University, MS Access level 2 class, ESRI online GIS training, 2 week fire assignment as FFT1(t), 2 week fire assignment as GIST(t)
Mary Fisher-Dunham	4/11/05	10/15/05	13.5	S-290, S-244, Rx-310, S-212, CPR/1 st Aid
Laura Thompson	4/18/05	5/28/05	3	S-244
Jesse Passwaters	6/6/05	10/15/05	9	S-290, S-244, ATVO, CPR/1 st Aid
Diane Taylor	5/16/05	9/27/05	8.5	S-130/190, I-100, L-180, ATVO, 2 week fire assignment as FFT2

Table 4. Fire Ecologist Accomplishments/Focus Area

(See VOYA annual report.)

Table 5. Fire Effect Crew Accomplishments

Category	Percent Time	Notes
FMH plots	20%	Estimated amount of time spent collecting plot data; includes any preparation time.
Mechanical Treatment plots	5%	Estimated amount of time spent collecting plot data; includes any preparation time.
CBI plots	0%	
Burn Unit Level Monitoring & Photo Points	25%	Estimated amount of time spent collecting plot data; includes any preparation time.
Fire Assignments and Fuels Projects	10%	Rx - 8 shifts (7 prescribed fires) WFU Assignment - 10 shifts (Lead monitor as GIST(t)) Wildfires in park - 8 shifts Fire Assignments - 24 shifts (one seasonal on one two-week assignment and Lead monitor on one two-week assignment)
Data Entry	10%	Estimated amount of time spent entering data from paper to PC. 2005 data entry is only about 85% complete.
Data Management and Conversion	10%	Estimated amount of time to convert FMH data to FEAT and to manage monitoring data; includes preparing species lists, error checking, learning conversion program, etc.
Data Analysis	~0%	
Supervision/Admin	<5%	Lead monitor hired and supervised three monitors,. Also includes paperwork for travel, payroll, etc.
Training & Professional Development	15%	Training, PT, etc.
Miscellaneous (Assistance from fire staff)	0%	The biological science technician on the fire staff, provides assistance to fire effects by writing reports on our prescribed fires and monitoring fuels and weather, but is not involved in monitoring vegetation plots. This year the technician wrote 6 of the 8 prescribed fire reports which saved the fire effects crew about 60 hours of work.